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| 10/796,461      | 03/09/2004  | Richard B. Joerger   | 200-66400 (PB040047AF) | 2407             |

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| EXAMINER |
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JAMAL, ALEXANDER

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| ART UNIT | PAPER NUMBER |
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2614

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/796,461

Applicant(s)

JOERGER, RICHARD B.

Examiner

Alexander Jamal

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Response to Amendment

1. Based upon the submitted amendment entered via RCE, the examiner notes that claims 1,3,6,7,12,17-19,21-28, have been amended and claims 29,30 have been added, and claims 4-5 are cancelled.
2. The examiner notes additional prior art patents to Kocis (5854828), and Klein (3803594) which also teach the very well known concept of frequency division multiplexing and further disclose using single tones as status signals. Examiner contends that either could be used in a 103 obviousness rejection in lieu of the Donovan reference. The examiner maintains the Donovan reference is the 103 rejection below.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. **Claim 30** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per **claim 30**, the claim recites an output node that receives a battery voltage level, and the claim further recites the same output node passing the plurality of tones and the claim further recites a voltage sensor to sense a DC voltage on the output node.

It is not clear what tones "the plurality of tones" is referring to. It is not clear if the voltage sensor is to sense the DC voltage of the battery voltage or the plurality of tones.

It is not clear what embodiment supported in the specification, the claim is referring to.

For the purpose of examination, the examiner assumes the claim is attempting to recite the interaction between the battery voltage sensor and the battery controller which uses the sensed voltage to determine status alarms for the battery, and also to determine when the charge control circuit should be used. The examiner notes that all of this functionality is disclosed in applicant's admitted prior art (Fig. 1, spec pages 3,4).

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1,17,19,6-8,18,20,29,30** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1, and further in view of Donovan et al. (3792470) and further in view of Bell (5930340).

As per **claim 1**, Applicant's admitted prior art Fig. 1 discloses encoding circuit 126, and a first pair of wires coupling out of controller 126. Although controller 126 only shows a single wire in Fig. 1, examiner notes that any signaling will require a signal path and ground return path. Examiner reads the ground and signal wire as the 'first pair of wires'. Controller 126 receives battery status information from sensor 114 and outputs signaling representing battery status on line 130 (specification page 5 lines 15-30). The signaling includes a plurality of alarms all giving the status of the same battery (specification pages 3,4). The controller circuit 126 inherently comprises an 'encoding circuit' for the purpose of generating status signaling to the controller 142. Examiner reads any signaling as comprising one or more frequency components (tones). However, applicant's admitted prior art does not disclose that each battery status is associated with a single tone and that the tones may be transmitted simultaneously on the first pair of wires.

Donovan teaches a system for sending multiplexed alarm status signals over a telephone line. Donovan teaches the advantage that tones associated with status signals may be transmitted simultaneously for the advantage of (Col 1 line 55 to Col 2 line 10) reducing the number or expensive lines needed to transmit all the status signals. It would have been obvious to one of ordinary skill in the art at the time of this application to use multiplexed (simultaneously output) tone signals for the status signaling for the advantage of minimizing the number of lines required.

Bell discloses that it is desirable to leverage existing copper infrastructure by multiplexing various functions together on a common subscriber line where each function has signaling in different frequency bands (Col 1 lines 25-40). Bell discloses that one

subscriber line may be used to transmit at least two signaling protocols with each protocol isolated so as to only couple to the correct terminals (Figs. 1 and 2). Examiner draws the standard telephone 'voice signaling' of Bell to applicant's admitted prior art 'power signaling' supplied on applicant's pair 110B (an existing copper pair) in Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of this application that the existing copper infrastructure could be used to multiplex signaling protocols at different frequencies (such as the disclosed DC power signal and the 'tone signaling' performed by applicant's Fig. 1 Controller 126), in order to make use of the existing copper infrastructure.

As per **claim 17**, it is rejected as per the claim 1 rejection. Applicant's Fig. 1 discloses voltage sensor 124 signaling controller 126. Bell discloses low pass filter 311 coupled to the low frequency signaling terminal (Fig. 3). Applicant's Fig. 1, in view of Donovan and Bell's teachings would have lowpass filtering at all of the low frequency (DC) terminals (battery output, power supply output, ONT power supply components 134,136, voltage sensor 124) and high pass filtering at all of the high frequency terminals.(battery status controllers 126,142). Examiner further contends it would have been obvious to one skilled in the art to use the appropriate filter type for each specific signal frequency used (such as DC or tone frequencies).

As per **claim 19**, it is rejected as per the claim 1 and 17 rejections. Applicant's Fig. 1 discloses charge control 122 which may couple or uncouple the battery voltage to the subscriber line.

As per **claims 21,25,27,29**, they are rejected as per the claim 19 rejection. The system of Donovan is not required to transmit the tone simultaneously and may only transmit a single tone. As per **claim 6**, Applicant's admitted prior art and Donovan and Bell disclose the multiplexed signaling on the subscriber line, and Bell discloses highpass (data band) and lowpass (voice band) filters coupled to each terminal that is coupled to the subscriber line (Figs. 1 and 2). Applicant's Fig. 1 discloses controller 126 that sends control signaling over a first pair of wires (a signal path and a ground return path) that is coupled to the second pair 110B via a filter as taught by Bell.

As per **claim 7**, Bell discloses low pass filter 311 coupled to the low frequency signaling terminal (Fig. 3). Applicant's Fig. 1, in view of Donovan and Bell's teachings would have lowpass filtering at all of the low frequency (DC) terminals (battery output, power supply output, ONT power supply components 134,136, voltage sensor 124) and high pass filtering at all of the high frequency terminals.(battery status controllers 126,142).

As per **claim 8**, applicant's Fig. 1 discloses power supply 114 that converts the AC input 115 to DC voltage coupled to the second pair of wires via a third pair of wires (outputting from the power supply). As per applicant's claims, there is another claimed 'second pair of wires'. This is also disclosed in applicant's Fig. 1 as the additional pair that is coupled to the telephone.

As per **claims 18,20,22,23,24,26,28**, they are rejected as per the claim 17 rejection. Also, applicant's Fig. 1 in view of Bell's teachings, discloses voltage sensor 134 and controller 142 connected to input node N2 via the filtering components. The

controller inherently comprises a status decoder for the purpose of decoding the battery status signaling sent by the controller 126.

As per **claim 30**, applicant's Figure 1 discloses a charge control circuit, voltage sensor and controller all coupled directly to a battery. Applicant's admitted prior art in view of the multiplex networking taught by Donovan and Bell would have those blocks coupled to the pair of wires as the signaling pair (via which the plurality of tones are sent).

3. **Claims 2-5,9**, rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1 in view of Donovan et al. (3792470), in view of Bell (5930340) as applied to claims 1,6-8,21 and further in view of DeCramer et al. (20020041676).

As per **claims 2**, Applicant's admitted prior art and Donovan and Bell disclose the multiplexed signaling on the subscriber line, and Bell discloses highpass (data band) and lowpass (voice band) filters coupled to each terminal that is coupled to the subscriber line (Figs. 1 and 2). Applicant's Fig. 1 discloses controller 126 that sends control signaling over a first pair of wires (a signal path and a ground return path) that is coupled to the second pair 110B via a filter as taught by Bell. However, Bell does not specify the actual circuit implementation of the filters.

DeCramer discloses multiplexed signaling on a subscriber line, and discloses highpass and lowpass filtering used to isolate the various terminal types from each other. DeCramer discloses highpass filter in Fig. 2 comprises capacitors 3 and 4, and lowpass filter in Fig. 3



comprising inductors L1 and L2. It would have been obvious to one of ordinary skill in the art at the time of this application to implement capacitors to the high frequency terminals and inductors to the low frequency (DC ) terminals of applicant's Fig. 1, for the purpose of performing the filtering function disclosed by Bell. As such the first pair of wires outputting from the controller will be coupled to the second pair of wires 110B (applicant's Fig. 1) via a pair of capacitors.

As per **claim 3**, the second pair of wires carried the battery dc voltage and the signaling (one or more tones). It would have been obvious (as per the claim 2 rejection) to use the appropriate frequency range filters for the specific types of signaling being used (such as DC and the tone frequencies).

As per **claims 9,10**, they are rejected as per the claim 2,7,8 rejections.

As per **claim 11**, applicant's Fig. 1 in view of Donovan and Bell's teachings, discloses voltage sensor 134 and controller 142 connected to input node N2 via the filtering components. The controller inherently comprises a status decoder for the purpose of decoding the battery status signaling sent by the controller 126.

4. **Claims 12-16** rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art Fig. 1 in view of Donovan et al. (3792470) in view of Bell (5930340) as applied to claims 1 and further in view of Dhara et al. (6879582).

As per **claim 12**, applicant's Fig. 1 discloses a battery with status signaling but does not specify that the battery is implemented as a UPS.

Dhara discloses a FTTH interface unit with a UPS with battery backup and status reporting (Col 6 lines 10-25). It would have been obvious to one of ordinary skill in the art at the time of this application to implement a UPS system for the advantage of providing a power supply that is less prone to interruptions.

As per **claim 13**, it is rejected as per the claim 9 rejection.

As per **claims 14,15**, they are rejected as per the claim 8 rejection.

As per **claim 16**, it is rejected as per the claim 11 rejection.

### ***Response to Arguments***

1. Applicant's arguments have been fully considered but they are not persuasive.

As per the applicant's arguments that the Donovan reference does not teach a plurality of alarms from a same battery, the examiner notes that applicant's admitted prior art already discloses a plurality of status alarms that are detected by and communicated by a battery controller which must inherently comprise a status encoder in order to derive the status alarm from the voltage measured by the voltage sensor. Donovan is relied upon to teach the well known concept of using frequency division multiplexing and the use of tones to represent status signals. Again, applicant's admitted prior art discloses the specific types of alarms (those coming from the SAME battery).

As per applicant's remarks concerning the Donovan reference not disclosing a single alarm sensor (remarks page 14), the examiner notes that applicant's admitted prior art is relied upon to disclose the specific types (and sources) of alarm signals being sent. Additionally, the examiner disagrees with applicant's statement that applicant's claimed device comprises a 'single alarm sensor'. Applicant's device comprises a single voltage sensor which sends data back to a controller. The controller requires some sort of logic (hardware or software) in order to interpret the voltage sensor signal, and correlate it to a specific alarm. The examiner reads each separate portion of said logic as a different 'alarm sensor' and as such, applicant's device has multiple 'alarm sensors'.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

Examiner Alexander Jamal

February 8, 2008

